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ABSTRACT

Native speakers of Egyptian Arabic make errors in their pronunciation of English that cannot always be accounted for by a contrastive analysis of Egyptian analysis of Egyptain Arabic and English. This study focuses on three types of errors in the pronunciation of voiced and voiceless "th" made by fluent speakers of English. These errors were noted during informal conversations. While not all of the errors can be explained by the surface structure of the native language phonemes, they all fit into a unified system which can be described. The unified system implies that the behaviors are governed by the way in which the deep structure of the native language phonemes act in relation to the target language.
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Some Deep Structure Manifestations in Second Language Errors of English /θ,ð/

by Margaret Heiss Moustafa

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Many errors made by Egyptian Arabs with English /θ,ð/ cannot be accounted for by a contrastive analysis of Egyptian Arabic and English. This study applies a non-laboratory accoustical analysis to all types of phonemic errors involving English /θ,ð/ made by adult native speakers of Egyptian Arabic. The analysis reveals patterns which suggest that the errors are not random or individual errors but different manifestations of the deep structure of Arabic in response to English.

Assumptions

In English there are six acute obstruent phonemes: /s,z,θ,ð,t,d/. Among these phonemes /s,z/ are distinguished from the others by having both strident and constrictive qualities, /θ,ð/ are distinguished from the others by having both mellow and constrictive qualities, and /t,d/ are distinguished from the others by having both mellow and stop qualities. (Jakobson, Faunt and Halle: 1965, 43-44). It is assumed here that this native speaker of Standard American English applies these perceptions to the utterances she hears.

In the following discussion it should be kept in mind that a non-laboratory analysis of phonemic utterances involves dual perceptions: 1) the phonemic interpretations the second language speaker applies to the target language utter-

ances and 2) the phonemic interpretations the analyst applies to the second language speaker's utterances. Hence, the data collected by this native speaker of English would not necessarily be the same data as that collected by a native speaker of Egyptian Arabic doing the same research.

Background

Native speakers of Egyptian Arabic have difficulty with English /θ,ð/. Colloquial Egyptian Arabic used in standard conversations in Cairo has /s,z,t,d/ phonemes but lacks /θ,ð/ phonemes. (Harrell:1957) However, /θ,ð/ phonemes do occur in literary or classical Arabic and in the process of becoming literate children are educated to distinguish the classical phonemes /θ,ð/. Despite this literary influence, when native speakers of Egyptian Arabic begin to speak English they frequently pronounce English /θ,ð/ (a mellow constrictive) as /s,z/ (a strident constrictive). The writer has never heard /θ,ð/ pronounced as /t,d/ (a mellow stop). Native informants concur that this type of behavior does not occur. Native speakers of Egyptian Arabic who speak fluent English usually say /θ,ð/ correctly but some errors involving /θ,ð/ persit. This study focuses on errors made by the fluent speakers.

Data

The writer noted errors in English involving /θ,ð/ made by educated native speakers of Egyptian Arabic during informal conversations. The subjects were all natives of Cairo. They were all university graduates and they all learned English in their post-puberty years. They spoke very fluent English at the time of observation.

Table I

Pronunciation Errors in English Involving /θ,ð/
by Adult Native Speakers of Egyptian Arabic
Who Speak Fluent English

Type	Required		Actual		Environment
	phoneme	message	phoneme	message	
1.	/θ/	/səmθin/ (something)	/s/	/səmsin/	/s/
	/ð/	/wət aym briyðin iz/ (What I'm breathin' is)	/z/	/wət aym briyzin iz/	/z/
2.	/s/	/naysər tuw/ (nicer to)	/θ/	/nayθər tuw/	/t/
	/z/	/iz it tuw briyziy/ (Is it too breezy?)	/ð/	/iz it tuw briyðiy/	/t/
	/s/	/ænd iy sed/ (and I said)	/θ/	/ænd iy θed/	/d/
3.	/s/	/ðə sekənd step/ (the second step)	/θ/	/ðə θekənd step/	/θ/
	/s/	/səmθin/ (something)	/θ/	/θəmθin/	/θ/
	/z/	/ðawzənd/ thousand)	/ð/	/ðawðənd/	/ð/
	/z/	/pawnz ə mənð/ (pounds a month)	/ð/	/pawnð ə mənð/	/ð/

All the errors observed can be grouped into one of three types. In type 1 /θ,ð/ are pronounced as /s,z/ in the environment of /s,z/. In type 2 /s,z/ are pronounced as /θ,ð/ in the environment of /t,d/. In type 3 /s,z/ are pronounced as /θ,ð/ in the environment of /θ,ð/. All errors noted are in the environment of /s,z,t,d,θ,ð/; no errors were noted in other environments.

Samples of each type of error are shown in Table I. Although the errors described here occur in environments where the phonemes in question do not cluster, the same patterns are found when the consonants in question cluster, e.g., for /awtsayd/ (outside) the writer heard /awtθayd/. The apparent lines of assimilation are indicated by arrows. Progressive and regressive assimilations occur over adjacent syllables and over next-to-adjacent syllables.

In types 2 and 3 /θ,ð/ occur when they are not required in English. In types 2 /s,z/ are pronounced as /θ,ð/ in the environment of /t,d/. This cannot be explained by allophonic variation in the native language. In Egypitan Arabic [θ,ð] are not allophones of /s,z/ in the environment of /t,d/: the Egyptian word /sit/ (a servant's lady) cannot be pronounced [θit]. In type 3 /s,z/ are pronounced as /θ,ð/ in the environment of /θ,ð/. Neither this environment nor this behavior would occur in Egyptian Arabic. The phonemic behavior described in types 2 and 3 cannot be explained by the surface structure of the native language phonemes or allophones.

Analysis

Is there a common feature underlying all errors involving /θ,ð/? This writer's perceptions of the behaviors in Table I may be described in acoustic terms as:

Type 1:	[mellow constrictive]	→	[strident constrictive]	in the environment of	[strident constrictive]
Type 2:	[strident constrictive]	→	[mellow constrictive]	in the environment of	[mellow stop]
Type 3:	[strident constrictive]	→	[mellow constrictive]	in the environment of	[mellow constrictive]

We may say the following about these behaviors:

A. In each case a constrictive changes its mellow or strident quality to match that of another constrictive or stop in its environment. When two constrictives with opposite strident-mellow characteristics are in the same environment, both can become strident or both can become mellow as in /səmθin/ (something) becoming both /səmsin/ (type 1) or /θəmθin/ (type 3). Hence, it appears that the mellow or strident quality of a constrictive can be influenced by the mellow or strident quality of other phonemes in its environment.

B. In no case does the constrictive quality of a phonemes change: only mellow and strident qualities change, e.g., English /θ,ð/ (a mellow constrictive) can become /s,z/ (a strident constrictive) but not /t,d/ (a mellow stop). Hence, it may be inferred that the constrictive quality is more important than strident-mellow qualities to the speakers.

From these observations we may say that among educated Egyptians, Egyptian Arabic responds to English /s,z,θ,ð,t,d/ in a unified system that may be described as follows:

> Constrictive qualities are more important than strident-mellow qualities; strident and mellow qualities may change to match other mellow or strident qualities in the environment.

Conclusion

These patterns suggest that the errors in Table I are not random, isolated or individual errors but different manifestations of a unified system. As this sytem cannot be accounted for by the surface structure of the native and target language phonemes, it must be assumed that the system is governed by the way in which the deep structure of the native phonemes act in relation to the target language.

Summary

Hence, we can conclude that native speakers of Egyptian Arabic display patterned behaviors in their mispronunciations of English involving /θ,ð/. While not all of these errors can be explained by the surface structure of the native language phonemes, all of these errors fit into a unified system which can be described. The unified system implies that the behaviors are governed by the way in which the deep structure of the native language phonemes act in relation to the target language.

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